SPEAKER: Alexander Friedland (T2, LANL)

TITLE: Flavor oscillations of supernova neutrinos

ABSTRACT:
A core-collapse supernova is sometimes described as a gravity-powered neutrino bomb: the energy equal to about a tenth of the rest mass of the Sun is emitted in a burst of 10^58 neutrinos on the timescale of several seconds. On their way out, these neutrinos undergo rather nontrivial flavor transformations. I will give an overview of this process, focusing on a couple of effects that particularly interest me at the moment: the impacts of the turbulence and neutrino “self-interactions”.